

REMARKS/ARGUMENTS

Claims 2-24 are currently pending in the above-identified application. Claims 2 and 3 have been amended to clarify the subject matter regarded as the invention. The amendments are supported throughout the specification and, therefore, do not add any new matter. Applicants gratefully acknowledge the Examiner's allowance of claims 21-24 pending resolution of the double patenting rejection.

Rejections under 35 U.S.C. §103(a)

The rejection of claims 2-5 and 8-19 under 35 U.S.C. §103(a) as being unpatentable over Martz (U.S. Patent No. 4,793,803) is respectfully traversed.

The present invention, as defined by claim 2, recites a combination of steps for fitting a set of upper and lower teeth in a masticatory system of a patient, including modeling a set of teeth in three or more predetermined positions prior to treatment; and generating a patient removable appliance for each of the three or more predetermined positions, the appliance having cavities and wherein the cavities of successive ones of the plurality of appliances have different geometries shaped to receive and resiliently reposition teeth from one arrangement to a successive arrangement. Modeling and generating a plurality of appliances at a single stage of treatment (e.g., prior to treatment), rather than requiring multiple examinations or inspections (e.g., multiple examinations, casts and setups) of the patients teeth throughout the course of treatment, can often be both cost effective and advantageous.

In contrast to the currently claimed invention, Martz teaches an individual appliance, having single units for the upper and lower jaws, that is insertable in and removable from the patient's teeth in order to correct minor malocclusions. Production of the appliance as taught by Martz requires steps of physically examining the patient and then producing, from a mold of the patient's teeth, a plaster cast and wax setup, from which the appliance is ultimately derived. Following fabrication, the appliance of Martz is applied to the teeth for repositioning.

While the entire specification of Martz is directed to use of a single appliance, the Examiner focuses on two sentences at column 5, lines 4-12 of Martz, which briefly mention

movement of the teeth through 1) multiple stages with the same appliance; or 2) by using multiple setups and appliances. No other teachings of multiple setups and appliances are found anywhere in the Martz disclosure. Viewing the cited reference as a whole, Applicants submit that Martz, at best, teaches following up an initial treatment period (i.e., fabrication and use of an appliance) with either modifications to the existing appliance, or repetition of previously recited fabrication methods in order to produce a separate subsequent appliance. In either case, Martz does not appear to teach generating, at any one given stage of treatment, multiple geometrically distinct appliances which are worn successively to reposition the patient's teeth. In particular, Martz does not teach modeling a set of teeth in three or more predetermined positions prior to treatment, and generating a removable appliance for each of the three or more predetermined positions, as required by the pending claims.

Thus, as set forth above, the cited reference fails to specifically show modeling a set of teeth in three or more predetermined positions prior to treatment and generating an appliance for each of the three or more predetermined positions. As such, the cited reference fails to teach each and every limitation of claims 2 and 3, and corresponding dependent claims, as is required to meet the initial burden of establishing *prima facie* obviousness. MPEP §§ 2142, 2143. Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

The rejection of claims 6-20 under 35 U.S.C. §103(a) as being unpatentable over Martz (U.S. 4,793,803) in view of Duret et al. (U.S. 4,611,288) is respectfully traversed.

It is acknowledged in the Office action that Martz does not show using data from X-rays. It is alleged, however, that Duret teaches using X-ray data to obtain dynamic occlusion, and that it would be obvious to one of ordinary skill in the art to modify Martz to include using X-ray data to model occlusion as shown by Duret in order to arrive at the invention as set forth in claims 6-20. Applicants respectfully disagree.

As set forth above, Martz does not appear to teach generating, at any one given stage of treatment, multiple geometrically distinct appliances which are worn successively to reposition the patient's teeth. In particular, Martz does not teach modeling a set of teeth in three

or more predetermined positions prior to treatment and generating a removable appliance for each of the three or more predetermined positions, as required by the pending claims.

Duret fails to provide the teachings that are missing from Martz. Duret teaches dental prostheses, such as crowns, inlays or dentures produced using optical impression taken of the oral region with nontraumatic radiation. Duret does not appear to teach any appliances for repositioning teeth, let alone modeling a set of teeth in three or more predetermined positions prior to treatment and generating a removable appliance for each of the three or more predetermined positions.

As such, the combination of Martz and Duret would fail to teach each and every element of the current claims 6 and 20. Accordingly, claims 6 and 20 are allowable over the cited references and withdrawal of the rejection is respectfully requested.

The rejection of claim 7 under 35 U.S.C. §103(a) as being unpatentable over Martz (U.S. Pat. No. 4,793,803) in view of Andreiko et al. (U.S. Pat. No. 5,683,243) is respectfully traversed.

It is alleged that it would have been obvious to one of ordinary skill to modify Martz to include using tomography data to model occlusion as shown by Andreiko. However, as set forth above, Martz does not teach generating, at any one given stage of treatment, multiple geometrically distinct appliances which are worn successively to reposition the patient's teeth. In particular, Martz does not teach modeling a set of teeth in three or more predetermined positions prior to treatment and generating a removable appliance for each of the three or more predetermined positions, as required by the pending claims.

Andreiko fails to provide the teachings that are missing from Martz. The Andreiko reference teaches designing a single, non-removable orthodontic appliance based on computer scanner images and anatomical shape data. Nowhere does Andreiko teach a removable appliance, let alone modeling a set of teeth in three or more predetermined positions prior to treatment and generating a removable appliance for each of the three or more predetermined positions.

Thus, for the reasons set forth above, even if one of ordinary skill would have been motivated to combine the cited references, the combination of Martz and Andreiko would still fail to teach each and every element of the invention as set forth in claim 7. Accordingly, withdrawal of the rejection of claim 7 under 35 U.S.C. §103(a) is respectfully requested.

Double Patenting Rejection

Claims 21-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 37-40 of U.S. Patent No. 6,450,807 in view of Martz (U.S. 4,793,803). In particular, it is alleged that use of the method of the claims of the '807 patent to generate the appliances of Martz would have been obvious to one of ordinary skill in the art looking to better form the appliances.

The rejection of the claims is acknowledged. Applicants submit that, upon final resolution of allowable claims, a terminal disclaimer in compliance with 37 C.F.R. 1.321(c) will be timely filed if necessary. However, for the reasons set forth above, Applicants traverse the rejection and submit that Martz does not apply to the currently pending claims. As such, withdrawal of the rejection of claims 21-24 under the obviousness-type double patenting is respectfully requested.

Appl. No. 10/788,510
Amdt. dated November 8, 2005
Reply to Office Action of June 8, 2005

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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 206-467-9600.

Respectfully submitted,

Date: 11/16/05


Michael T. Rosato
Reg. No. 52,182

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 206-467-9600
Fax: 415-576-0300
MTR:jms
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